Discovery Labs’ Phase 2a Aerosurf® Study Published in Journal of Aerosol Medicine and Pulmonary Drug Delivery

Warrington, PA – May 14, 2010, -- Discovery Laboratories, Inc. (Nasdaq:DSCO), announces the publication of results from its previously-conducted Phase 2a feasibility study of Aerosurf®, the Company’s aerosolized KL4 surfactant, for the prevention of respiratory distress syndrome (RDS) in premature infants, in the May 2010 issue of the Journal of Aerosol Medicine and Pulmonary Drug Delivery in the study titled “An Open Label, Pilot Study of Aerosurf® Combined with nCPAP to Prevent RDS in Preterm Neonates” (Finer et al., Journal of Aerosol Medicine and Pulmonary Drug Delivery 2010).

Dr. Robert Segal, Senior Vice President and Chief Medical Officer of Discovery Labs commented, “We are extremely pleased that the Journal of Aerosol Medicine and Pulmonary Drug Delivery has published these data and made them more widely available to the medical community. We believe that Aerosurf holds the promise to significantly expand the use of surfactant therapy by providing neonatologists with a means of delivering KL4 surfactant in a less-invasive form, potentially avoiding the risks associated with endotracheal intubation and mechanical ventilation. This study played an important role in our Aerosurf development program, including our decision to license our proprietary capillary aerosol generating technology, which is better suited to effectively aerosolize our KL4 surfactant.”

Phase 2a Trial Summary
The Phase 2a clinical trial was an open label, multicenter study to evaluate the feasibility, safety and tolerability of Aerosurf for the prevention of RDS in premature infants. The trial was conducted in the United States and enrolled 17 infants with a mean birth weight of 1,460 grams and a gestational age ranging between 28-32 weeks. Aerosurf was administered to infants within 30 minutes of birth using a commercially-available aerosolization device (Aeroneb Pro®) via nCPAP over a three-hour duration. A proprietary nCPAP adapter was employed to optimize surfactant aerosol flow.

Key observations of the study included:

- Twelve (71%) of the infants required a single dose of Aerosurf only.
- All infants survived through the assessment period (day 28 of life).
- Fifteen (88%) of the infants survived with no evidence of bronchopulmonary dysplasia (commonly known as BPD, a chronic lung disease) at day 28 of life.
- Five (29%) of the infants required intubation and mechanical ventilation (commonly known as nCPAP failure).
- Aerosurf was generally safe and well tolerated.

These data were previously presented at the 2006 Pediatric Academic Societies Annual Meeting and the 2007 Meeting of European Society of Pediatric Research.
About AEROSURF®
Aerosurf is an investigational drug-device combination product that has not been approved by the U.S. Food and Drug Administration or any other world health regulatory authority. The study results listed above include information that may be of interest to healthcare practitioners; however, the clinical relevance of these results has not been fully established and further scientific investigation may be warranted.

About the Journal of Aerosol Medicine and Pulmonary Drug Delivery
The Journal of Aerosol Medicine and Pulmonary Drug Delivery (JAMPDD) is the official Journal of The International Society for Aerosols in Medicine (ISAM). JAMPDD serves as a forum for studies involving inhalation of particles and gases in the respiratory tract, including the use of aerosols as tools to study basic structural and functional phenomena, their use as selective delivery systems for medication and the toxic effects of inhaled agents.

About Discovery Labs
Discovery Laboratories, Inc. is a biotechnology company developing surfactant therapies for respiratory diseases. Surfactants are produced naturally in the lungs and are essential for breathing. Discovery Labs’ novel proprietary KL₄ surfactant technology produces a synthetic, peptide-containing surfactant that is structurally similar to pulmonary surfactant and is being developed in liquid, aerosol or lyophilized formulations. In addition, Discovery Labs’ proprietary capillary aerosolization technology produces a dense aerosol, with a defined particle size that is capable of potentially delivering aerosolized KL₄ surfactant to the deep lung without the complications currently associated with liquid surfactant administration. Discovery Labs believes that its proprietary technology platform makes it possible, for the first time, to develop a significant pipeline of surfactant products to address a variety of respiratory diseases for which there frequently are few or no approved therapies. For more information, please visit our website at www.Discoverylabs.com.

Forward-Looking Statements
To the extent that statements in this press release are not strictly historical, all such statements are forward-looking, and are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from the statements made. The reader is encouraged to read the examples of such risks and uncertainties that are described in Discovery Labs’ filings with the Securities and Exchange Commission, including the most recent reports on Forms 10-K, 10-Q and 8-K, and any amendments thereto.

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